REMARKS

The Office rejects claims 1-4 in the subject application. Applicant amends claim 1 in this Response. Claims 1-4 (1 independent claims; 4 total claims) remain pending in the application.

Support for the various amendments may be found in the originally filed specification, claims, and figures. For example, support for the amendment to claim 1 can be found at paragraphs [0069] and [0071] of the subject application. No new matter has been introduced by these amendments. Reconsideration of this application is respectfully requested.

35 U.S.C. §103 REJECTIONS

The Examiner rejects claims 1-4 under 35 U.S.C. §103(a) as allegedly being unpatentable over a previously cited reference Darmawaskita (U.S. Patent No. 6,184,659, issued February 6, 2001, assignee is Microchip Technology) in view of a newly cited reference Park (U.S. Patent No. 5,824,883, issued October 20, 1998, assignee is Samsung Display Devices Co., Ltd.). Applicant respectfully traverses the rejection.

Darmawaskita

Darmawaskita discloses a single integrated circuit package for controlling the charging circuits of a battery charger having a microcontroller 102, a switch mode power supply (SMPS) controller 104, an analog-to-digital converter (ADC) 106, and an analog input multiplexer 108.[1] Darmawaskita discloses that the program of microcontroller 102 causes a voltage setpoint and/or a current setpoint to be sent to SMPS controller 104, which uses the setpoint(s) as a target reference(s). SMPS controller 104 has a pulsed output 114, which drives the power transistors in power converter 110. When the current and/or voltage inputs 116 are less than the setpoint(s) from microcontroller 102, SMPS controller 104 increases the pulse repetition rate and/or duty cycle at the output 114. This increases the associated voltage and/or current to battery 112 being charged and vice versa.[2]

[1] Darmawaskita, Abstract and Figure 1.
[2] Darmawaskita, column 5 (lines 23-51).

Additionally, microcontroller 102 also monitors condition values (e.g., charging voltage/current temperature) of battery 112 being charged.[3] For example, the charger can be monitoring both the battery voltage and/or temperature as a measure condition. Once the full charge condition is detected, the charger drops the charging current to a much lower value (trickle current).[4]

Park

Park discloses a battery leakage sensing system, which senses whether a battery is leaking to the inner bottom of a battery pack.[5] If there is no leakage, current does not flow. However, if there is leakage (which leaks to the inner bottom of the battery pack 10), current will flow, thus allowing devices to be activated to indicate the occurrence of the leakage.[6]

Specifically, Park discloses that the leakage sensor is located at the inner bottom of a battery pack 10 for detecting battery leakage by allowing a current to flow.[7] If leakage does not occur, current does not flow since the leakage sensing lines 22 and the leakage sensing lines 24 are not connected to each other. As such, the LED does not emit light, which indicates that the battery is not leaking. However, when the leakage occurs (which leaks to the inner bottom of battery pack 10), the leakage sensing lines are turned ON by means of the leakage so that the current flows. This allows the LED to emit light, which indicates the occurrence of the leakage.[8]

Accordingly, Park does not teach, advise, or suggest a liquid detection section that controls the control section based on an impedance or resistance value detected. Rather, Park merely teaches a simple circuit that allows or disallows current flow through the sensor circuit when detecting battery leakage.[9]

Thus, Darmawaskita in view of Park fails to teach, advise, or suggest "the liquid detection section controls the control section based on an impedance or resistance value detected" as recited in claim 1 (and claims 2-4, which variously depend from claim 1).

[3] Darmawaskita, column 5 (lines 52-64).
[4] Darmawaskita, column 10 (lines 30-50).
[5] Park, column 1 (lines 31-40) and Figure 2.
[6] Park, column 2 (lines 48-61).
[7] Park, column 2 (lines 6-9).
[8] Park, column 2 (lines 48-61).
[9] Park, column 2 (lines 6-9).

One exemplary advantage of this claimed limitation is that by detecting the impedance (resistance value), liquid detection section 62 detects infiltration or generation of the liquid in secondary battery 10.[10] Park fails to recognize this advantage, and consequently, fail to address it.

Therefore, Darmawaskita in view of Park fails to teach, advise, or suggest one or more of the claimed limitations, so that claims 1-4 are patentable over these references.

CONCLUSION

Thus, the Applicant respectfully submits that the present application is in condition for allowance. Reconsideration of the application is thus requested. Applicant invites the Office to telephone the undersigned if he or she has any questions whatsoever regarding this Response or the present application in general.

Respectfully submitted,

By: 12-20-05

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[10] Subject Application, paragraph [0069].